5. Receipt

Program Name: Receipt.java Input File: receipt.dat

Your grocery store is going out of business due to the arrival of a new competitor, the HED Corporation's Family Mart! After a failed effort to infiltrate their store, you are banned from entering the premises of any Family Mart. However, your assistant goes through the trash bin at each HED location and can retrieve receipts. Since HED does not want its customers to know how much each item is worth, the receipts only contain the number of items bought and a total price.

In order to remain competitive, you need to adjust your prices to match HED's. However, your dim-witted assistant only has two hands and thus only brings you two receipts from each HED. Can you use the receipts to figure out the price of each item?

Input

The file begins with an integer T ($1 \le T \le 10$). After that, T test cases follow. Each test case consists of exactly 3 lines. The first line contains two space-separated words, the names of the items bought. The second line contains two integers and a double, which represents the number of the first item purchased, the number of the second item purchased, and the total price of the purchase respectively. The quantities will fit in a 32-bit integer, and the total price will fit into a double. The third line is another receipt in the same format.

Output

For each HED store, print a line "Grocery Store #N:", where N is the index of the grocery store in the input. If it's possible to reconstruct the prices of the original goods, print the answer in the following syntax: "item1: cost1, item2: cost2". If it is impossible to compute the prices of the goods, print the line "CANNOT COMPUTE PRICES" instead.

Example Input File

3
apple orange
1 2 6.00
2 4 12.00
eraser pencil
1 2 2.50
3 1 2.50
bread butter
2 3 5.00
10 16 26.00

Example Output to Screen

Grocery Store #1: CANNOT COMPUTE PRICES Grocery Store #2: eraser: 0.50, pencil: 1.00 Grocery Store #3: bread: 1.00, butter: 1.00